

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1. (Previously Presented) A method of dithering an image, the method comprising the acts of:

receiving a target color at a high color resolution for a current one of a plurality of pixels of the image, the target color being intermediate between a first color and a second color at a low color resolution;

tracking an accumulated error across the plurality of pixels up to and including the current pixel;

selecting one of the first color and the second color as a final pixel color, wherein the first color is selected in the event that the accumulated error is less than a threshold, wherein the second color is selected in the event that the accumulated error exceeds the threshold, and wherein the accumulated error is reduced below the threshold in the event that the second color is selected;

providing an updated accumulated error to a next one of the plurality of pixels;
and

outputting the selected final pixel color for display on a display device.

Claim 2. (Original) The method of claim 1, wherein the act of tracking the accumulated error includes the acts of:

determining a current error based on a difference between the first color and the target color; and

adding the current error to the accumulated error.

Claim 3. (Original) The method of claim 2, further comprising the act of reducing the accumulated error by an amount corresponding to the threshold in the event that the second color is selected.

Claims 4-5. (Cancelled)

Claim 6. (Original) The method of claim 1, wherein the plurality of pixels corresponds to a scan line of a display device.

Claim 7. (Original) The method of claim 6, further comprising the act of initializing the accumulated error at a beginning of the scan line.

Claim 8. (Original) The method of claim 7, wherein the accumulated error is initialized to a value that depends at least in part on a line number of the scan line.

Claim 9. (Original) The method of claim 8, wherein the accumulated error is initialized to a value that is different for successive frames.

Claim 10. (Original) The method of claim 1, wherein the threshold corresponds to a difference between respective high resolution representations of the first color and the second color.

Claim 11. (Original) The method of claim 1, wherein the target color is one of a plurality of independent color components for the pixel.

Claim 12. (Currently amended) A device for dithering an image, the device comprising:

an accumulator module configured to track an accumulated error across a plurality of pixels of the image;

a conversion module configured to receive a high resolution color signal for a current pixel of the image and to generate a corresponding low resolution color signal;

an adjustment module to select between a first color and a second color for the current pixel by modifying ~~configured to modify~~ the low resolution color signal from [[a]] the first color to [[a]] the second color for the current pixel in the event that the accumulated error exceeds a threshold; and

an output module configured to output the low resolution color signal for the current pixel for display on a display device,

wherein after processing the current pixel, the accumulated error is provided to a next one of the plurality of pixels.

Claim 13. (Original) The device of claim 12, wherein the accumulator module includes:

a current error circuit configured to extract a current error from the high resolution color signal for the current pixel; and

a first adder circuit configured to add the current error to the accumulated error and to provide an updated accumulated error to the adjustment module.

Claim 14. (Original) The device of claim 13, wherein the adjustment module includes:

a comparator circuit configured to compare the updated accumulated error to a threshold, thereby generating a dither control signal; and

a second adder circuit configured to receive the low resolution color signal from the conversion module and to adjust the received low resolution color signal based on the dither control signal, thereby generating a final color signal.

Claim 15. (Original) The device of claim 14, wherein the comparator circuit is further configured to provide the dither control signal as a feedback signal to the accumulator module, and wherein the accumulator module is further configured to reduce the accumulated error based on the dither control signal.

Claim 16. (Original) The device of claim 12, wherein the accumulator module includes a register configured to store the accumulated error.

Claim 17. (Original) The device of claim 12, wherein the adjustment circuit includes an adder circuit configured to add the accumulated error to the high resolution color signal, thereby generating an intermediate color signal.

Claim 18. (Original) The device of claim 17, wherein the conversion circuit includes a truncator circuit configured to reduce the intermediate color signal to a low resolution color signal.

Claim 19. (Previously Presented) The device of claim 18, wherein the truncator circuit is further configured to reduce the intermediate color signal by removing a number of least significant bits and to store the removed least significant bits in a register as a new accumulated error.

Claim 20. (Currently amended) A graphics processing unit comprising:
a geometry pipeline unit configured to generate pixel data for an image; and
a scanout module configured to provide the pixel data to a display device,
wherein the scanout module includes a dithering unit, the dithering unit
comprising:

an accumulator module configured to track an accumulated error across a plurality of pixels of the image;

a conversion module configured to receive a high resolution color signal for a current pixel of the image and to generate a corresponding low resolution color signal;

an adjustment module to select between a first color and a second color for the current pixel by modifying ~~configured to modify~~ the low resolution color signal from [[a]] the first color to [[a]] the second color for the current pixel in the event that the accumulated error exceeds a threshold; and

an output module configured to output the low resolution color signal for the current pixel for display on the display device.